



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/085,581 | 02/26/2002 | Yu-Cheun Jou | 020278 | 8984 |
| 23696 | 7590 | 03/20/2008 | EXAMINER | |
| QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | PATEL, NIRAV B | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2135 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 03/20/2008 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kascanla@qualcomm.com
nanm@qualcomm.com

| | | | |
|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/085,581 | Applicant(s) JOU ET AL. | |
| | Examiner NIRAV PATEL | Art Unit 2135 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2007 (RCE).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's submission for RCE filed on Dec. 03, 2007 has been entered.
2. Claims 1, 3-6, 8, 9, 10, 20, 22-25, 27- 29, 39-41 are pending. Claims 1, 6, 20 and 25 are amended and Claims 39-41 are newly added claims by applicant.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 20, 22-24, 25, 39-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 20 recites, "An apparatus for scrambling information bits in a communication system, the apparatus comprising: means for determining a scrambling sequence....; means for scrambling information bits.....". The claimed apparatus directs to logic or module or algorithm and in accordance with the applicant's specification [page 15, paragraph 1056], logic or module or algorithm is computer software. As such, the claimed apparatus must include hardware or physical transformation necessary to realize any of the functionality of the claimed modules and produce a useful, concrete and tangible result. Absent recitation of such hardware or physical transformation as part of the claimed apparatus, it is considered non-statutory.

Claims 22-24 depend on claim 20, therefore they are rejected with the same rationale applied against claim 20 above.

Claims 25, 39 and 40 have limitations that are similar to those of claim 20, thus they are rejected with the same rationale applied against claim 20 above.

Art Unit: 2135

Claims 27-29 depend on claim 25, therefore they are rejected with the same rationale applied against claim 25 above.

Claim 41 recites, "A computer program product, comprising: a *computer-readable medium* comprising for causing code executable on at least on computer to:". The computer-readable medium of claim 41 is comprised communication media, which comprises a carrier wave [specification page 1 paragraph 1002]. However, the signal is not limited to a tangible embodiment. As such, the claim is not limited to statutory subject matter and is therefor non-statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, 20, 22-34, 39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Bodin (WO 97/12461).

As per claim 1, Bodin discloses:

determining a scrambling sequence based on a metric of system time, wherein said determining a scrambling sequence includes determining the metric based on a subinterval of a system time interval in which the information bits are to be transmitted [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, 23-26, page 8 lines 1-4, page 6 lines 1-3]; and scrambling information bits with the scrambling sequence in accordance with the metric [Fig. 2, page 6 lines 1-3].

As per claim 3, the rejection of claim 1 is incorporated and Bodin discloses:

determining the metric in accordance with a first subinterval of the system time interval [page 7 lines 7-10].

As per claim 4, the rejection of claim 1 is incorporated and Bodin discloses:

performing mapping of the metric on the scrambling sequence [page 7 lines 7-10].

As per claim 5, the rejection of claim 1 is incorporated and Bodin discloses:

performing an exclusive-OR of the information bits with the scrambling sequence [Fig. 2, page 6 lines 2-4].

As per claim 20, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 22, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 3. Thus, it is rejected with the same rationale applied against claim 3 above.

As per claim 23, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 4. Thus, it is rejected with the same rationale applied against claim 4 above.

As per claim 24, the rejection of claim 20 is incorporated and it encompasses limitations that are similar to limitations of claim 5. Thus, it is rejected with the same rationale applied against claim 5 above.

As per claim 39, Bodin discloses:

determining a scrambling sequence based on an interval of channel in which the information bits are to be transmitted [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, page 8 lines 1-4, page 6 lines 1-3]; and

Art Unit: 2135

scrambling information bits with the scrambling sequence in accordance with the interval of the channel [Fig. 2, page 6 lines 1-3].

As per claim 41, it encompasses limitations that are similar to limitations of claim 1. Thus, it is rejected with the same rationale applied against claim 1 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 8-10, 25, 27-29 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent (EP 0446194) in view of in view of Bodin (WO 97/12461).

As per claim 6, Dent discloses:

determining an unscrambling sequence based on count/time clock (for time slot) [Fig. 4, 6, 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering device, including a synchronization mechanism, col. 16 lines 12-16, col. 16 lines 50-53-col. 17 lines 1-40, col. 15 lines 8-14]; determining the count/time clock based on a first subinterval of a system time interval preceding a second subinterval of the system time interval by a pre-determined number of subintervals, wherein the second subinterval comprises information bits to be unscrambled [Figs. 5, 7 and Figs. 4, 6, col. 15 lines 8-14, col. 16 lines 50-53-col. 17 lines 1-40]; and determining the

Art Unit: 2135

unscrambling sequence in accordance with the time clock/count [Fig. 4-7, col. 16 lines 50-53-col. 17 lines 1-40, col. 18 lines 20-38].

Dent teaches determining an unscrambling sequence based on count/time clock as shown in Fig. 4 [component 204, 205]. Dent doesn't expressively mention a metric of system time.

Bodin discloses:

determining a unscrambling sequence based on a metric of system time [Fig. 3-6, page 6 lines 6-9, page 7 lines 6-10, 23-26, page 8 lines 1-4, page 8 lines 35-37 and page 9 lines 1-2].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Bodin with Dent, since one would have been motivated to provide reliable encryption/decryption in a radio communication system without needing to make substantial changes to the signaling protocol and/or system equipment [Bodin, page 3 lines 2-6].

As per claim 8, the rejection of claim 6 is incorporated and Dent discloses:

determining the first subinterval of the system time interval preceding the second subinterval of the system time interval by one subinterval [Fig. 7, time clock or block counter controls the operation of the time-of-day or block-count driven ciphering/deciphering device, including a synchronization mechanism, col. 16 lines 12-16, col. 17 lines 5-40, col. 18 lines 10-25].

As per claim 9, the rejection of claim 6 is incorporated and Bodin discloses:

performing mapping of the metric on the unscrambling sequence [page 7 lines 7-10].

As per claim 10, the rejection of claim 6 is incorporated and Bodin discloses:

performing an exclusive-OR of the information bits with the unscrambling sequence [Fig. 2, page 6 lines 2-4].

As per claim 25, it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

As per claim 27, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 8. Thus, it is rejected with the same rationale applied against claim 8 above.

As per claim 28, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 9. Thus, it is rejected with the same rationale applied against claim 9 above.

As per claim 29, the rejection of claim 25 is incorporated and it encompasses limitations that are similar to limitations of claim 10. Thus, it is rejected with the same rationale applied against claim 10 above.

As per claim 40, it encompasses limitations that are similar to limitations of claim 6. Thus, it is rejected with the same rationale applied against claim 6 above.

Response to Amendment

6. This written action is responding to the Request for Continued Examination (RCE) dated 12/03/07. In view of applicant's argument, a new reference by Bodin is found and used in combination with various previously cited prior art. See new grounds of rejection above and therefore, the applicant's arguments, filed on 12/03/07, are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Juha Haikkila (GB 2294853) - -Subscriber-specific scrambling and descrambling in a subscriber network Smeets (US 6813625) – Method and device for self-clock controlled pseudo random noise sequence generator.

Art Unit: 2135

Lee et al (US 5245661) – Distributed sample scrambling system

Hakaste (US 6813355) – Method and arrangement for ciphering information transfer

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIRAV PATEL whose telephone number is (571)272-5936. The examiner can normally be reached on 8 am - 4:30 pm (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NBP

3/12/08

/KIMYEN VU/

Supervisory Patent Examiner, Art Unit 2135